Multimedia interfaces for users with high functioning autism: An empirical investigation

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INTRODUCTION

This empirical research was intended to develop knowledge for software development for highly functional autistic individuals use of computers in developmental psychology. This software would require complex attention, memory, self-monitoring of desirable behaviors, decreasing un-desirable behaviors and processing and understanding social cues. There is very little empirical data on matching cognitive disorders and features of suitable technology to rehabilitate these disorders at this time. This study focuses on three questions:

1. Are people with autism influence by interface modalities in the same way as the general population?
2. What are the characteristics of suitable multimedia interfaces for autism?
3. How should human-inspired communicative modalities such as facial expressions be used in the context of interfaces for autism?

Autism is defined as pervasive developmental disorder based upon qualitative impairments in social interaction, verbal and non-verbal communication and restricted, repetitive stereotyped patterns of behavior, interests and activities. Autism with normal or high IQ is referred to as highly functioning autism, which the present sub-group was chosen for purposes of a homogenous training group. People with autism have a tendency to interpret speech literally rather than in reference to context. They have difficulties in recognizing iron, sarcasm, metaphors and other common expressions. They have difficulty interpreting homographs in sentence content, and to correctly relating to the sentence meaning.

This study was an attempt to determine if software and technology could act as a rehabilitation-training tool to identify and moderate special needs individuals into making ‘socially correct’ choices when confronted in the real world.

SUMMARY

Participants with autism transferred learning when simple interface was used, without complex choices and decisions being made upon visual and written information. Several impediments related to the design of the software, the most prevalent being that specific software will need to be redesigned on the dysfunction attributed to autism and the disengagement of attention. The design software was based upon “typical” users and extensive research and was not delved into the complexities of highly functional autistic spectrum disorder. Further research and development of the software should include typical characteristics of highly functional autistic individuals, and the major issues modified to insure positive proceedings in the modifications.

PERSONAL OPINION

Having an autistic child forces an individual to attempt to make the “Best” choices in their child’s life. I am disappointed that I haven’t found any other data follow-up in relation to this research study. I believe that rehabilitation is possible, especially in social interaction, but it will most likely be in virtual human interaction, rather than software applications with desktop models. Highly functional autistic individuals have trouble with human connection, especially direct eye contact. The virtual human would provide feedback in a non-threatening manner that I believe autistic individuals could respond to, and be eager to spend time in the virtual world of animated technology as a learning tool.

References

Grynszpan, O., Martin, J., & Nadel, J. (2008). Multimedia interfaces for users with high functioning autism: An empirical investigation. Retrieved from www.elsevier.com/locate/ijhcs